



FILEID**SETCLUSTR

SSSSSSSS SSSSSSSS	EEEEEEEEE EEEEEEEEE	TTTTTTTTT TTTTTTTTT	CCCCCCCC CCCCCCCC	LL LL	UU UU	UU UU	SSSSSSSS SSSSSSSS	TTTTTTTTT TTTTTTTTT	RRRRRRRR RRRRRRRR	
SS SS SS SS	EE EE EE EE	TT TT TT TT	CC CC CC CC	LL LL LL LL	UU UU UU UU	UU UU UU UU	SS SS SS SS	TT TT TT TT	RR RR RR RR	
SSSSSS SSSSSS	EEEEEEE EEEEEEE	TTT TTT	CC CC CC CC	LL LL LL LL	UU UU UU UU	UU UU UU UU	SSSSSS SSSSSS	TTT TTT	RRRRRRRR RRRRRRRR	
SS SS SS SS	EE EE EE EE	TT TT TT TT	CC CC CC CC	LL LL LL LL	UU UU UU UU	UU UU UU UU	SS SS SS SS	TT TT TT TT	RR RR RR RR	
SSSSSSSS SSSSSSSS	EEEEEEEEE EEEEEEEEE	TTT TTT	CCCCCCCC CCCCCCCC	LLLLLLLL LLLLLLLL	UUUUUUUU UUUUUUUU	UUUUUUUU UUUUUUUU	SSSSSSSS SSSSSSSS	TTT TTT	RRRRRRRR RRRRRRRR	
LL LL LL LL LL LL LL LL LL LL LL LL	IIIIII IIIIII	SSSSSSSS SSSSSSSS	SS SS SS SS SS SS SS SS	SSSSSSSS SSSSSSSS	SSSSSSSS SSSSSSSS	SSSSSSSS SSSSSSSS	SS SS SS SS SS SS SS SS	LL LL LL LL LL LL LL LL LL LL LL LL	IIIIII IIIIII	SSSSSSSS SSSSSSSS

```
1 0001 0 MODULE setclustr (
2 0002 0 IDENT= 'V04-000'
3 0003 0 LANGUAGE (BLISS32)
4 0004 0 ADDRESSING_MODE (EXTERNAL = GENERAL, NONEXTERNAL=LONG_RELATIVE)
5 0005 0 )
6 0006 1 BEGIN
7 0007 1 ****
8 0008 1 *
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27 0027 1 *
28 0028 1 *
29 0029 1 *
30 0030 1 ++
31 0031 1 *
32 0032 1 * FACILITY: SET CLUSTER
33 0033 1 *
34 0034 1 * ABSTRACT: Implement SET CLUSTER qualifiers
35 0035 1 *
36 0036 1 * AUTHOR: Paul R. Beck
37 0037 1 *
38 0038 1 * DATE: 19-FEB-1984
39 0039 1 *
40 0040 1 * REVISION HISTORY:
41 0041 1 *
42 0042 1 * V03-001 DAS0001 David Solomon 09-Jul-1984
43 0043 1 * Fix truncation errors; make nonexternal refs LONG_RELATIVE.
44 0044 1 *
45 0045 1 *--
```

```
47 0046 1 LIBRARY 'SYSSLIBRARY:LIB';
48 0047 1 LIBRARY 'SYSSLIBRARY:CLIMAC.L32';      ! CLI macros
49 0048 1
50 0049 1 External routines
51 0050 1
52 0051 1 EXTERNAL ROUTINE
53 0052 1   set$validate_quorum,           ! Validate and set new quorum value
54 0053 1   cli$present,                ! Get qualifiers
55 0054 1   cli$get_value,              ! Get values of qualifiers
56 0055 1   lib$put_output,             ! SPUT message to SYSS$OUTPUT
57 0056 1   lib$cvt_dtb;               ! Convert ASCII to numerical
58 0057 1
59 0058 1 Literal data definitions
60 0059 1
61 0060 1 LITERAL
62 0061 1   true = 1;
63 0062 1   false = 0;
64 0063 1
65 0064 1
66 0065 1 Declare the error messages
67 0066 1
68 0067 1 Definitions in [CLIUTL.SRC]SET.MSG
69 0068 1
70 0069 1 EXTERNAL LITERAL
71 0070 1   set$_nocluster,            ! node not in cluster
72 0071 1   set$_syntax;              ! syntax error
73 0072 1
74 0073 1 Routines used in this module
75 0074 1
76 0075 1 FORWARD ROUTINE
77 0076 1   set$cluster;              ! Analyze qualifiers for SET CLUSTER
78 0077 1
79 0078 1 Macros to generate a string with a descriptor.
80 0079 1
81 0080 1 MACRO
82 M 0081 1   ASCID[]=%CHARCOUNT(%REMAINING), ! string descriptor
83 0082 1   UPLIT BYTE(%REMAINING)%;
```

```

85      0083 1 %SBTTL 'SET$CLUSTER'
86      0084 1 ++
87      0085 1 SET$CLUSTER
88      0086 1
89      0087 1 FUNCTIONAL DESCRIPTION:
90      0088 1
91      0089 1     Add support for the following commands:
92      0090 1         SET CLUSTER/QUORUM=n ! set active quorum to specified value
93      0091 1         Further description of each qualifier accompanies the code implementing
94      0092 1         that qualifier.
95      0093 1
96      0094 1 CALLING SEQUENCE:
97      0095 1     CALL SET$CLUSTER
98      0096 1
99      0097 1 FORMAL PARAMETERS:
100     0098 1     none
101     0099 1
102     0100 1
103     0101 1
104     0102 1
105     0103 1
106     0104 1
107     0105 1
108     0106 1
109     0107 1
110     0108 1
111     0109 1
112     0110 1
113     0111 1
114     0112 1
115     0113 1
116     0114 1
117     0115 1
118     0116 1
119     0117 1
120     0118 1
121     0119 1
122     0120 1
123     0121 1
124     0122 1
125     0123 2 GLOBAL ROUTINE set$cluster =
126     0124 2 BEGIN
127     0125 2
128     0126 2 LOCAL
129     0127 2     oldpriv : SBBLOCK [8],           | Permanent privileges
130     0128 2     desc   : SBBLOCK [dsc$c_s_bln], | general descriptor
131     0129 2     quorum: LONG,             | /QUORUM=q value
132     0130 2     new_quorum: LONG,          | quorum value set
133     0131 2     fao_buffer: BLOCK [132,BYTE], | buffer used with FAO
134     0132 2     fao_desc: SBBLOCK [dsc$c_s_bln], | descriptor for same
135     0133 2     output_desc: SBBLOCK [dsc$c_s_bln], | work descriptor for output
136     0134 2     status: LONG;            | completion status
137     0135 2
138     0136 2     OWN    quorum_ctrstr: VECTOR [2,LONG] | FAO control string
139     0137 2                         INITIAL ('ASCID(%SET-I-QUORUM, new quorum is !UW.));
140     0138 2
141     0139 2 EXTERNAL

```

```
142      0140 2    clu$gl_club;                                ! =0 if no cluster
143      0141 2
144      0142 2    | Verify that caller has sufficient privileges. SYSPRV, OPER and CMKRNL
145      0143 2    | are required.
146      0144
147      P 0145 2    IF NOT (status = $SETPRV (ENBFLG = 1,          | Enable
148      P 0146 2          PRVADR = 0,                      | No new privileges
149      P 0147 2          PRMFLG = 1,                      | Permanent privs
150      0148 2          PRVPRV = oldpriv)        ! Store current ones here
151      0149 2
152      0150 2
153      0151 2
154      0152 2
155      0153 2    | Check to see if privileges there. If not, return error.
156      0154 2
157      0155 2
158      0156 2
159      0157 2
160      0158 2
161      0159 2
162      0160 2
163      0161 2
164      0162 2
165      0163 2    | If this node is not in a cluster, there's not much point in proceeding.
166      0164 2
167      0165 2
168      0166 2
169      0167 2
170      0168 2    IF .clu$gl_club EQ 0
                  BEGIN
                  SIGNAL (set$nocluster);
                  RETURN false;
                  END;
```

```
172      0169 2 %SBTTL ' /QUORUM = q'
173      0170 2
174      0171 2
175      0172 2 | Initialize dynamic descriptors
176      0173 2
177      0174 2 $init_dyndesc (desc);
178      0175 2 $init_dyndesc (fac_desc);
179      0176 2 $init_dyndesc (output_desc);
180      0177 2 fao_desc [dsc$w_length] = 132;
181      0178 2 fao_desc [dsc$a_pointer] = fao_buffer;
182      0179 2 output_desc [dsc$w_length] = 0;
183      0180 2 output_desc [dsc$a_pointer] = fao_buffer;
184      0181 2
185      0182 2 status = cli$present (%ASCID 'QUORUM');
186      0183 2 IF .status
187      0184 2 THEN
188      0185 2 BEGIN
189      0186 2
190      0187 2 SET CLUSTER /QUORUM = n
191      0188 2 | The value supplied will be used as a new active quorum value across
192      0189 2 | the entire cluster. It is checked against high and low limits:
193      0190 2 | V <= Q <= (2V+2)/2 ! V = current active votes
194      0191 2 | and is pinned to the high or low limit as appropriate. If the value
195      0192 2 | supplied is 0, the "proper" quorum for the current cluster is
196      0193 2 | supplied: (2V+2)/2
197      0194 2
198      0195 2 IF NOT cli$get_value (%ASCID 'QUORUM', desc )
199      0196 2 THEN
200      0197 2     quorum = 0
201      0198 2 ELSE
202      0199 4     IF (NOT lib$cvt_dtb (.desc [dsc$w_length],
203      0200 4             .desc [dsc$a_pointer],
204      0201 4             quorum ))
205      0202 4     OR (.quorum GTR 65535)
206      0203 3     THEN
207      0204 4         BEGIN
208      0205 4
209      0206 4         | QUORUM must be a number no larger than a word.
210      0207 4
211      0208 4         SIGNAL(set$syntax, 1, desc);
212      0209 4         RETURN false;
213      0210 3         END;
214      0211 2
215      0212 2 | The rest of the work must be done synchronized with the connection
216      0213 2 | manager.
217      0214 2
218      0215 3 status = set$validate_quorum (.quorum, new_quorum);
219      0216 4 IF (.status) AND (.new_quorum NEQ 0)
220      0217 3 THEN
221      0218 2
222      0219 3     | Report the quorum value which was set
223      0220 2
224      P 0221 3     IF $FAO ( quorum_ctrstr,           ! ctrstr
225      P 0222 3             output_desc [dsc$w_length],   ! outlen
226      P 0223 3             fao_desc,                   ! outbuf
227      0224 4             .new_quorum )                 ! p1 = quorum
228      0225 3 THEN
```

```

: 229      0226 3    lib$put_output ( output_desc );
: 230      0227 3    RETURN true;
: 231      0228 3
: 232      0229 2    END;
: 233      0230 2
: 234      0231 2    RETURN true;
: 235      0232 1    END;

```

```

.TITLE SETCLUSTR
.IDENT \V04-000\
.PSECT SPLITS,NOWRT,NOEXE,2
20 2C 4D 55 52 4F 55 51 2D 49 2D 54 45 53 25 00000 P.AAA: .ASCII \%SET-I-QUORUM, new quorum is !UW.\:
21 20 73 69 20 6D 75 72 6F 75 71 20 77 65 6E 0000F 0001E
2E 57 55 00021
00 00 4D 55 52 4F 55 51 00024 P.AAC: .BLKB 3
010E0006 0002C P.AAB: .ASCII \QUORUM\<0>\<0>
00000000' 00030 P.AAC: .LONG 17694726
00 00 4D 55 52 4F 55 51 00034 P.AAE: .ADDRESS P.AAC
010E0006 0003C P.AAD: .ASCII \QUORUM\<0>\<0>
00000000' 00040 P.AAE: .LONG 17694726
.PSECT $OWNS,NOEXE,2
00000021 00000 QUORUM_CTRSTR:
00000000' 00004 .LONG 33
.ADDRESS P.AAA
.EXTRN SET$VALIDATE_QUORUM
.EXTRN CLISPRESENT, CLISGET VALUE
.EXTRN LIB$PUT_OUTPUT, LIB$CVT DTB
.EXTRN SETS NOCLUSTER, SETS SYNTAX
.EXTRN CLUSGL CLUB, SYSSSETPRV
.EXTRN SYSSFAO
.PSECT SCODE$,NOWRT,2
0122
53 00000000G 00 000C 00000 ENTRY SET$CLUSTER, Save R2,R3
5E FF54 CE 9E 00002 MOVAB LIB$SIGNAL, R3
F8 F8 AD 9F 00009 -172(SP), SP
01 DD 00011 PUSHAB OLDPRIV
00000000G 7E 01 7D 00013 #1
00 04 FB 00016 MOVQ #1, -(SP)
52 50 D0 0001D CALLS #4, SYSSSETPRV
09 52 E8 00020 MOVL R0, STATUS
52 DD 00023 BLBS STATUS, 1$
05 00000000G 00 01 FB 00025 PUSHL STATUS
FA AD 02 E0 0002C 1$: CALLS #1, LIB$STOP
04 2894 8F 3C 00031 #2, OLDPRIV+2, 2$
52 52 E8 00036 2$: MOVZWL #10388, STATUS
04 52 DD 00039 BLBS STATUS, 3$
00000000G 00 0E 11 0003B PUSHL STATUS
00 00 D5 0003D 3$: BRB 4$
TSTL CLUSGL CLUB
0148
0149
0153
0154
0157
0163

```

**SETCLUSTR
V04-000**

/QUORUM = q

C 9
16-Sep-1984 00:42:29 VAX-11 Bliss-32 V4.0-742
14-Sep-1984 12:09:00 [CLIUTL.SRC]SETCLUSTR.B32;1

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63	00000000G	OC	12	00043	BNEQ	5\$	#SETS_NOCLUSTER					0166	
		8F	DD	00045	PUSHL	#1	LIB\$SIGNAL					0167	
		01	FB	0004B	CALLS	10\$						0174	
F0	AD 020E0000	00C8	31	0004E	BRW							0175	
		8F	DO	00051	5\$:	MOVL	#34471936, DESC					0176	
10	AE 020E0000	F4	AD	00059	CLRL	DESC+4						0177	
		8F	DO	0005C	MOVL	#34471936, FAO_DESC						0178	
08	AE 020E0000	14	AE	00064	CLRL	FAO_DESC+4						0179	
		OC	AE	00067	MOVL	#34471936, OUTPUT_DESC						0180	
10	AE 020E0000	84	8F	9B 00072	CLRL	OUTPUT_DESC+4						0181	
14	AE 020E0000	18	AE	9E 00077	MOVZBW	#132, FAO_DESC						0182	
		08	AE	B4 0007C	MOVAB	FAO_BUFFER, FAO_DESC+4						0183	
0C	AE 020E0000	18	AE	9E 0007F	CLRW	OUTPUT_DESC						0184	
	00000000G	00000000	EF	9F 00084	MOVAB	FAO_BUFFER, OUTPUT_DESC+4						0185	
		00	FB	0008A	PUSHAB	P.AAB						0186	
		52	DO	00091	CALLS	#1, CLISPRESENT						0187	
		7E	52	E9 00094	MOVL	RO_STATUS						0188	
		F0	AD	9F 00097	BLBC	STATUS, 9\$						0189	
	00000000G	00000000	EF	9F 0009A	PUSHAB	DESC						0190	
		00	FB	000A0	PUSHAB	P.AAD						0191	
		04	50	E8 000A7	CALLS	#2, CLISGET_VALUE						0192	
			6E	D4 000AA	BLBS	RO, 6\$						0193	
			2C	11 000AC	CLRL	QUORUM						0194	
			5E	DD 000AE	BRB	8\$						0195	
		F4	AD	DD 000B0	PUSHL	SP						0196	
	00000000G	7E	F0	AD 3C 000B3	PUSHL	DESC+4						0197	
		00	AD	3C 000B3	MOVZWL	DESC, -(SP)						0198	
		09	03	FB 000B7	CALLS	#3, LIB\$CVT_DTB						0199	
	0000FFFF	8F	50	E9 000BE	BLBC	RO, 7\$						0200	
			6E	D1 000C1	CMPL	QUORUM, #65535						0201	
			10	15 000C8	BLEQ	8\$						0202	
		F0	AD	9F 000CA	7\$::	PUSHAB	DESC					0203	
			01	DD 000CD	PUSHL	#1						0204	
	00000000G	63	00000000	8F	DD 000CF	PUSHL	#SETS_SYNTAX						0205
			03	FB 000D5	CALLS	#3, LIB\$SIGNAL						0206	
			3F	11 000D8	BRB	10\$						0207	
			04	AE 9F 000DA	8\$::	PUSHAB	NEW_QUORUM					0208	
			04	AE DD 000DD	PUSHL	QUORUM						0209	
	00000000G	00	02	FB 000E0	CALLS	#2, SET\$VALIDATE_QUORUM						0210	
		52	50	DO 000E7	MOVL	RO_STATUS						0211	
		28	52	E9 000EA	BLBC	STATUS, 9\$						0212	
			04	AE D5 000ED	TSTL	NEW_QUORUM						0213	
			23	13 000FO	BEQL	9\$						0214	
			04	AE DD 000F2	PUSHL	NEW_QUORUM						0215	
			14	AE 9F 000F5	PUSHAB	FAO_DESC						0216	
			10	AE 9F 000F8	PUSHAB	OUTPUT_DESC						0217	
	00000000G	00	EF	9F 000FB	PUSHAB	QUORUM_CTRSTR						0218	
		0A	04	FB 00101	CALLS	#4, SYSSFAO						0219	
		0A	50	E9 00108	BLBC	RO, 9\$						0220	
	00000000G	00	08	AE 0010B	PUSHAB	OUTPUT_DESC						0221	
		50	01	FB 0010E	CALLS	#1, LIB\$PUT_OUTPUT						0222	
		01	D0	00115	9\$::	MOVL	#1, RO					0223	
			04	00118	RET							0224	
			50	D4 00119	10\$::	CLRL	R0					0225	
			04	0011B	RET							0226	

; Routine Size: 284 bytes, Routine Base: \$CODE\$ + 0000

SETCLUSTR
V04-000

/QUORUM = q

D 9
16-Sep-1984 00:42:29
14-Sep-1984 12:09:00

VAX-11 Bliss-32 V4.0-742
[CLIUTL.SRC]SETCLUSTR.B32;1

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SETCLUSTR
V04-000

/QUORUM = q

: 237 0233 1 END
: 238 0234 0 ELUDOM

E 9
16-Sep-1984 00:42:29
14-Sep-1984 12:09:00

VAX-11 Bliss-32 V4.0-742
[CLIUTL.SRC]SETCLUSTR.B32;1

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.EXTRN LIB\$SIGNAL, LIB\$STOP

PSECT SUMMARY

Name	Bytes	Attributes
SPLIT\$	68	NOVEC,NOWRT, RD ,NOEXE,NOSHR, LCL, REL, CON,NOPIC,ALIGN(2)
\$OWNS	8	NOVEC, WRT, RD ,NOEXE,NOSHR, LCL, REL, CON,NOPIC,ALIGN(2)
SCODE\$	284	NOVEC,NOWRT, RD , EXE,NOSHR, LCL, REL, CON,NOPIC,ALIGN(2)

Library Statistics

File	Symbols			Pages Mapped	Processing Time
	Total	Loaded	Percent		
-\$255\$DUA28:[SYSLIB]LIB.L32;1	18619	14	0	1000	00:01.9
-\$255\$DUA28:[SYSLIB]CLIMAC.L32;1	14	0	0	9	00:00.1

COMMAND QUALIFIERS

BLISS/CHECK=(FIELD,INITIAL,OPTIMIZE)/LIS=LISS:SETCLUSTR/OBJ=OBJ\$:SETCLUSTR MSRC\$:SETCLUSTR/UPDATE=(ENHS:SETCLUSTR)

Size: 284 code + 76 data bytes
Run Time: 00:07.6
Elapsed Time: 00:29.5
Lines/CPU Min: 1852
Lexemes/CPU-Min: 11715
Memory Used: 103 pages
Compilation Complete

0052 AH-BT13A-SE
VAX/VMS V4.0

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